

**PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT : COSGROVE, et al.  
SERIAL NO : continuation of 09/092,160  
FILED : June 5, 1998  
TITLE : PURIFIED PLANT EXPANSIN PROTEINS AND DNA ENCODING  
SAME

Grp./A.U. : 1652  
Examiner : SAIDHA, T.  
Docket No. : P04666US7

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Please enter the following remarks and amendments into the above-identified application:

**In the Claims**

Please cancel claims: 1-9.

Please add claims 10-21 as follows:

10. (new)

An isolated polynucleotide which encodes a protein having expansin activity.

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**CERTIFICATE OF MAILING BY EXPRESS MAIL**

I hereby certify that this document and the documents referred to as enclosed therein are being deposited with the U.S. Postal Service in an envelope as "Express Mail Post Office to Addressee" addressed to: Assistant Commissioner for Patents, Box Patent Application, Washington, D.C. 20231, prior to 5:00 p.m. on the 29 day of June, 2001.

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11. (new)

The polynucleotide of claim 10 wherein said polynucleotide comprises 60% sequence similarity to SEQ ID NO:1.

12. (new)

A polynucleotide comprising a DNA sequence encoding a polypeptide selected from the group consisting of SEQ ID NO:2; SEQ ID NO:3; SEQ ID NO:4; SEQ ID NO:5, SEQ ID NO:6 and SEQ ID NO:7, and/or conservatively modified variants thereof.

13. (new)

A polynucleotide which encodes an expansin polypeptide which will restore endogenous cell wall extension activity of heat inactivated cell walls and which will hybridize to a polynucleotide of SEQ ID NO:1 under moderate to high stringency conditions.

14. (new)

A method of identifying a nucleotide sequence which encodes upon expression an expansin protein comprising:  
obtaining an oligonucleotide of contiguous basis from SEQ ID NO:1;  
using said oligonucleotide to identify similar nucleotide sequences through a hybridization, PCR,  
or computer algorithm based assay of sequences suspected to encode a protein with  
expansin activity, and thereafter  
assaying the protein encoded by said identified sequence for expansin activity.

15. (new)

The fragment of claim 14 wherein said fragment is a PCR primer.

16. (new)

The fragment of claim 14 wherein said fragment is a hybridization probe.

17. (new)

A nucleotide sequence which encodes upon expression a protein with expansin activity and sequence identified by the method of claim 14.

18. (new)

A method of identifying a nucleotide sequence which encodes upon expression an expansin protein comprising:

obtaining an oligonucleotide fragment of contiguous bases which encode contiguous amino acids from SEQ ID NOS:2-6 or their conservatively modified variants; using said fragment to identify similar nucleotide sequences through a hybridization or PCR based assay; and thereafter assaying the protein encoded by said sequence for expansin activity.

19. (new)

A nucleotide sequence identified by the method of claim 18.

20. (new)

A method of identifying a nucleotide sequence which encodes upon expression an expansin protein comprising:  
designing a primer to amplify expansin encoding DNA based upon the amino SEQUENCE ID NO:2;  
amplifying a cDNA fragment from said primer,  
screening a cDNA library to identify a full length,  
coding sequence of an expansin protein.

21. (New)

A nucleotide sequence which encodes upon expression a protein with expansin activity, said sequence identified by the method of claim 20.

## REMARKS

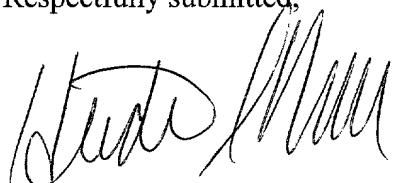
Claims 1-9 have been canceled. Claims 10-21 are newly presented herein for consideration. Applicant respectfully requests reconsideration.

## NEW CLAIMS

Claims 10-21 have been added which include methods for identifying expansin encoding nucleic acid sequences from the sequences disclosed in the specification. Support for these new claims may be found in the specification at page 19, lines 25-30, and page 33, line 15 - page 34, line 16.

It is not felt that any other fee is due at this time, however if one is necessary, please charge Deposit Account No. 26-0084.

Respectfully submitted,



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